



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

US EPA RECORDS CENTER REGION 5



405465

12 SEP 2011

MEMORANDUM

DATE:

SUBJECT: Action Memorandum - Request for Approval and Funding for a Time-Critical Removal Action at the USS Lead Site, East Chicago, Lake County, Indiana (Site ID # 053J)

FROM: Fredrick A. Micke, On-Scene Coordinator
Emergency Response Branch 2 – Removal Section 3

THRU: Linda M. Nachowicz, Chief *Oliver Del For LN*
Emergency Response Branch 2

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

The purpose of this Action Memorandum is to request and document your approval to expend up to \$944,400 to conduct a time-critical removal action at the USS Lead Site located in East Chicago, Indiana. The proposed time-critical removal action herein will mitigate threats to public health, welfare and the environment posed by the presence of lead-contaminated soil on residential properties at the USS Lead Site by the proper excavation and off-site disposal of the lead contaminated soil. There are no nationally significant or precedent setting issues associated with the proposed response at this NPL site.

The Action Memorandum would serve as approval for expenditures by U.S. EPA, as the lead technical agency, to take actions described herein to abate the imminent and substantial endangerment posed by hazardous substances at the Site. The proposed removal of hazardous substances would be taken pursuant to Section 104(a)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC 9604(a)(1), and Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR 300.415.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: IND047030226
RCRA ID: None
STATE ID: None
Category: Time-Critical Removal

A. Site Description

1. Removal site evaluation

The Indiana Department of Environmental Management (IDEM) sampled some of the residential properties to the north of USS Lead in 1985. IDEM found elevated lead levels in these residential yards. In September of 1985, the Indiana State Board of Health found USS Lead in violation of state law and made the statement that the lead-contaminated soils may pose a risk to human health and the environment. IDEM referred the USS Lead facility to U.S. EPA for cleanup.

Since 1985, U.S. EPA's RCRA Corrective Action program has overseen the remediation and management of lead-contaminated soils within the boundaries of the U.S. Smelter and Lead Refinery, Inc. facility. The cleanup efforts at the facility included the placement of the contamination in a Corrective Action Management Unit (CAMU) and the remediation of portions of the on-site wetlands. In 2003, U.S. EPA sampled soils in the residential area north of USS Lead as a part of the RCRA Corrective Action investigation. These sampling results showed some yards to have high levels of lead contamination. Surface soil samples collected at 11 properties showed levels of lead exceeding 1,200 parts per million (ppm). The highest sample found had a lead level of 3,000 ppm. Most of the yards with the highest lead sampling results were in the southern region of the residential area. The RCRA Corrective Action program looked at the possible source of the off-site lead contamination and determined it was from various multiple industrial sources. The RCRA Corrective Action program referred the off-site contamination from the facility to the Superfund Program.

In 2008, U.S. EPA conducted a time-critical removal action to address the 11 properties with lead levels exceeding 1,200 ppm which were identified as part of the RCRA Corrective Action investigation. In all, 13 properties were remediated during this removal action. A final Pollution Report for this action was issued on November 18, 2008.

Additional sampling was conducted during the RI in 2009 and 2010. As a result of the sampling, U.S. EPA discovered the 14 additional areas with lead levels exceeding the removal action level of 1,200 ppm. Approximately half of the areas to be remediated are located within a public housing development. The public housing development is located on the former site of an Anaconda Lead Products facility.

2. Physical location

The USS Lead Site includes the residential area north of the US Smelter and Lead (USS Lead) facility in East Chicago, Indiana. The geographical coordinates for the Site are 41.625676 North latitude and -87.461557 West longitude. The public housing portion of the removal action is located in the southwest corner of the residential area. It is bounded by Magnolia Lane, Gladiola Ave., E. 151st Street, and Aster Ave. The remaining areas with elevated lead levels are scattered throughout the central and eastern portions of the residential area in East Chicago, Indiana.

The area surrounding the USS Lead Site was screened for Environmental Justice (EJ) concerns using Region 5's EJ Assist Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSEAT)). Census tracts with a score of 1, 2, or 3 are considered to be high-priority potential EJ areas of concern according to EPA Region 5. The USS Lead Site is in a census tract with a score of 1. Therefore, Region 5 considers this site a high-priority potential EJ area of concern. Please refer to the attached analysis for additional information (Attachment 1).

3. Site Characteristics

The USS Lead Site includes about 1200 homes, a small number of parks, open space as a part of the railroad right-of-way, schools, and public buildings. Some properties in the residential area have levels of lead elevated above U.S. EPA cleanup levels. The likely source for the lead contamination is the USS Lead facility and other industrial sources in the East Chicago, Indiana area.

The USS Lead facility was a primary and secondary smelter of lead in the East Chicago, Indiana area. It began operations around 1906 and ended in 1985. From about 1920 until 1973, USS Lead was a primary smelter of lead. This included a refining process to create high quality lead free of bismuth. From 1973 until its closure in 1985, USS Lead was a secondary smelter and a reprocessor of car batteries. The secondary refinery operations included: battery breaking with tank treatment of spent battery acid at a rate of 16,000 gallons per day; baghouse dust collection with storage in on-site waste piles of up to 8,000 tons of flu dust; and blast furnace slag disposal, which was deposited in the wetland adjacent to and along the southern boundary of the facility. Secondary lead recovery operations ceased in 1985. USS Lead paid out a settlement to fund the operation and maintenance at the closed and remediated facility in a Resource Conservation and Recovery Act (RCRA) Corrective Action agreement with the U.S. EPA.

The East Chicago neighborhood around USS Lead has been an area of intense industrial activity dating back to the early 1900's. Smelting and other metal related processes dominated the activities in the area. Many of the companies involved in metal work included lead-related processes which operated smelting and lead compound production facilities. As a part of their activities, the companies in the area generated lead product or waste in a particulate form. The potential emission sources at these facilities included: furnace stacks, waste piles, and spills of

lead products. Chronic airborne pollution from USS Lead and other facilities in the area is the probable source of the lead contamination in the area.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The threat is presented by the presence of lead-contaminated soil. The presence of lead contaminated soil in residential yards at concentrations up to 5,993 ppm, which is above the regulatory removal action level of 1,200 ppm, makes this a time-critical removal action.

U.S. EPA has concluded that there exists a potential for exposure of humans to lead, a hazardous substance, because of the presence of lead-contaminated soil in residential neighborhoods at the Site. Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Off-site migration of the documented hazardous waste would greatly increase the potential exposure to nearby human populations, animals, or the food chain.

5. NPL status

The USS Lead Site was listed as a Superfund site on the national priorities list (NPL) on April 8, 2009. U.S. EPA began the RI on June 26, 2009. During December 2009 and August 2010, U.S. EPA contractors sampled yards in residential areas and background locations. Currently, U.S. EPA is revising the RI and U.S. EPA contractors are drafting the Feasibility Study. U.S. EPA expects to select a remedy by fall 2012, and begin the Remedial Action in 2013.

6. Maps, pictures and other graphic representations

See Attachment 5—Properties With Lead > 1,200 mg/kg in Soil 0-6”

B. Other Actions to Date

1. Previous actions

On January 22, 2008, U.S. EPA signed an action memorandum to conduct a time-critical removal action to address the properties with lead levels exceeding the removal action limit of 1,200 ppm. These properties were identified based on sampling data collected during the RCRA Corrective Action investigation. This removal action began on June 9, 2008, and involved the excavation and off-site disposal of lead contaminated soil from 13 residential properties. A second action memorandum for the Site was signed on August 13, 2008, to raise the project ceiling in order to complete the ongoing, time-critical removal action. In total, 1838 tons of lead-contaminated soil were removed and disposed of at an approved landfill. Excavated areas were backfilled with clean fill and seeded. This removal action was completed on September 25, 2008, and the final Pollution Report issued on November 18, 2008.

2. Current actions

No current actions by private or local/state governments are underway at the Site. As previously mentioned, U.S. EPA is revising the Remedial Investigation and drafting the Feasibility Study.

C. State and Local Authorities' role

1. State and local actions to date

The State of Indiana does not have the financial resources to eliminate the threat posed by lead-contaminated soils. The City of East Chicago, Indiana has taken no action.

III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Site may pose an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Section 300.415 (b)(2). These conditions include:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

Lead contaminated-soil is situated throughout the residential community near the Site. Samples taken by U.S. EPA of the soil in specific residential properties during the RI showed elevated concentrations of lead. Surface soil samples collected at 14 properties showed levels of lead exceeding the removal action level of 1,200 ppm. The highest sample found had a lead level of 5,993 ppm. The residential yards have high accessibility to sensitive populations including young children and pregnant women. Sensitive populations such as children under the age of 7 years and pregnant women live in many of these residences. Adults and children may be exposed to high levels of lead from normal foot traffic, yard work, and play.

The effects of lead exposure are more severe for young children and the developing fetus through exposure to a pregnant woman. The harmful effects of lead include premature births, lower birth weight, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. In adults, lead increases blood pressure, induces anemia as a result of the inhibition of hemoglobin synthesis, decreases reaction time, affects memory, and damages the male reproductive system. Lead is also considered by U.S. EPA to be a class B2 or probable human carcinogen. Reference: ATSDR. 1993. Toxicological Profile for Lead. Agency for Toxic Substances and Disease Registry, Division of Toxicology. Atlanta, GA. U.S. Department of Health and Human Services, Public Health Service.

Elevated levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface.

U.S. EPA sampling verified many of these results. There are elevated levels of hazardous wastes present at the residential areas surrounding the USS Lead Site. Surface soil samples (0-6") collected at 14 properties as part of the RI showed levels of lead exceeding the removal action level of 1,200 ppm. The highest sample found had a lead level of 5,993 ppm. Sensitive populations, including children under 7 years old and pregnant women, may become exposed through normal foot traffic, yard work, or play. Additionally the presence of the contaminants near the surface allows for the migration of the contaminant from residential yards via wind, rain or manual dispersion.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

The Remedial Investigation documented surface soil samples with elevated total lead concentrations of up to 5,993 ppm. Heavy rains may cause further migration of contaminants off site. Winds could cause dust particles containing heavy metals to continue to migrate into the surrounding community. These weather conditions could result in a continued release of the hazardous wastes described herein to the surrounding soil, air and surface water.

The availability of other appropriate federal or state response mechanisms to respond to the release.

The State of Indiana does not have the financial resources to eliminate this threat.

IV. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected hazardous substances on Site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description:

Removal action activities at this Site will include, but are not limited to, excavation and proper disposal of lead-contaminated soils. The removal action for this Action Memorandum will conduct lead-contaminated soil removals at five East Chicago Public Housing addresses [REDACTED] and [REDACTED], [REDACTED] and [REDACTED], and [REDACTED]) and 9 residential properties [REDACTED], [REDACTED], [REDACTED], [REDACTED] and

[REDACTED], [REDACTED], and [REDACTED]). In addition, two properties that were not remediated in 2008 because of access issues will be remediated during this removal action if access can be obtained ([REDACTED] and [REDACTED]).

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment. Removal activities on Site will include:

- a) Develop a Work Plan for the lead-contaminated soil assessment of the Site.
- b) Develop and implement a site health and safety plan.
- c) Develop and implement an air monitoring plan.
- d) Develop and implement site security measures.
- e) Conduct land surveying to the extent necessary to establish a grid system to locate all property boundaries, special features (pipes, storage tanks, etc.), and sample locations.
- f) Based upon soil results, remove, transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.
- g) Obtain site access to conduct a removal action from those residences which exceeded 1,200 ppm lead as determined by U.S. EPA's RI sampling. Lead is considered the main contaminant of concern. Removal action levels for lead are 400 ppm for the residential properties, as noted in guidance from ATSDR. Impacted residences will be cleaned to these action levels.]
- h) Backfill excavated areas with clean material and topsoil with seeding as needed.

The removal action will be conducted in a manner not inconsistent with the NCP. The OSC has initiated planning for provision of post-removal Site control consistent with the provisions of Section 300.415(l) of the NCP and the response actions proposed herein are consistent with any long-term remedial actions which may be required. However, elimination of all threats presented by hazardous substances in the vicinity of the residences is expected to minimize the need for post-removal Site controls.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a

facility in compliance, as determined by U.S. EPA, with the U.S. EPA Off-Site Rule, 40 C.F.R. § 300.440.

2. Contribution to Remedial Performance:

The proposed action will not impede future responses based upon available information.

3. Engineering Evaluation/Cost Analysis (EE/CA):

Not Applicable

4. Applicable or Relevant and Appropriate Requirements (ARARs):

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. An e-mail was sent to Mr. Harry Atkinson of IDEM asking for any State of Indiana ARARs that may apply.

5. Project Schedule:

The activities outlined in this action memo are estimated to take sixty calendar days to complete.

B. Estimated Costs

REMOVAL ACTION PROJECT CEILING ESTIMATE	
<u>Extramural Costs:</u>	
<u>Regional Removal Allowance Costs:</u>	
Total Cleanup Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies. Includes a 20% contingency)	\$706,000
<u>Other Extramural Costs Not Funded from the Regional Allowance:</u>	
Total START, including multiplier costs	\$81,000
Total Decontamination, Analytical & Tech. Services (DATS)	\$ 0
Total CLP	\$ 0
Subtotal	\$ 81,000
Subtotal Extramural Costs	\$787,000
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand)	\$157,400
TOTAL REMOVAL ACTION PROJECT CEILING	\$944,400

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented on Site, and the potential exposure pathways to nearby populations described in Sections II, III and IV above, actual or threatened release of hazardous substances and pollutants or contaminants from the Site, failing to take or delaying action may present an imminent and substantial endangerment to public health, welfare or the environment, increasing the potential that hazardous substances will be released, thereby threatening the adjacent population and the environment. Delayed or non-action may result in increased likelihood of external exposure, inhalation, ingestion or direct contact to human populations accessing and working on the Site.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

For Administrative purposes, information concerning confidential enforcement strategy for this Site is contained in the Enforcement Confidential Addendum.

The total U.S. EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$1,618,485¹

$$(\$944,400 + \$50,000) + (62.76\% \times \$994,400) = \$1,618,485$$

¹Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 27, 2008. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

IX. RECOMMENDATION

This decision document represents the selected removal action for the USS Lead Site, East Chicago, Lake County, Indiana. It has been developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this Site (Attachment 2). Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action and I recommend your approval of the proposed removal action.

The total removal action project ceiling if approved will be \$944,400. Of this, an estimated \$863,400 may be used for clean-up contractor costs. You may indicate your decision by signing below.

APPROVE:  DATE: 9/12/2011
Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Director, Superfund Division

Enforcement Addendum

Figures:

See Attachment 5

Attachments

1. Environmental Justice Analysis
2. Index to the Administrative Record
3. Detailed Contractor Cost Estimate
4. Independent Government Cost Estimate
5. Properties With Lead > 1,200 mg/kg in Soil 0-6"

cc: Sherry Fielding, U.S. EPA, 5202-G
(email: Sherry Fielding/DC/USEPA/US)
M. Chezick, U.S. DOI, **w/o Enf. Addendum**,
(email: michael_chezik@ios.doi.gov)
G. Hauer, IDEM, **w/o Enf. Addendum**
(email: ghauer@idem.in.gov)

BCC PAGE

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ENFORCEMENT ADDENDUM

**USS LEAD SITE
EAST CHICAGO, INDIANA**

**ENFORCEMENT CONFIDENTIAL
NOT SUBJECT TO DISCOVERY**

(REDACTED 1 PAGE)

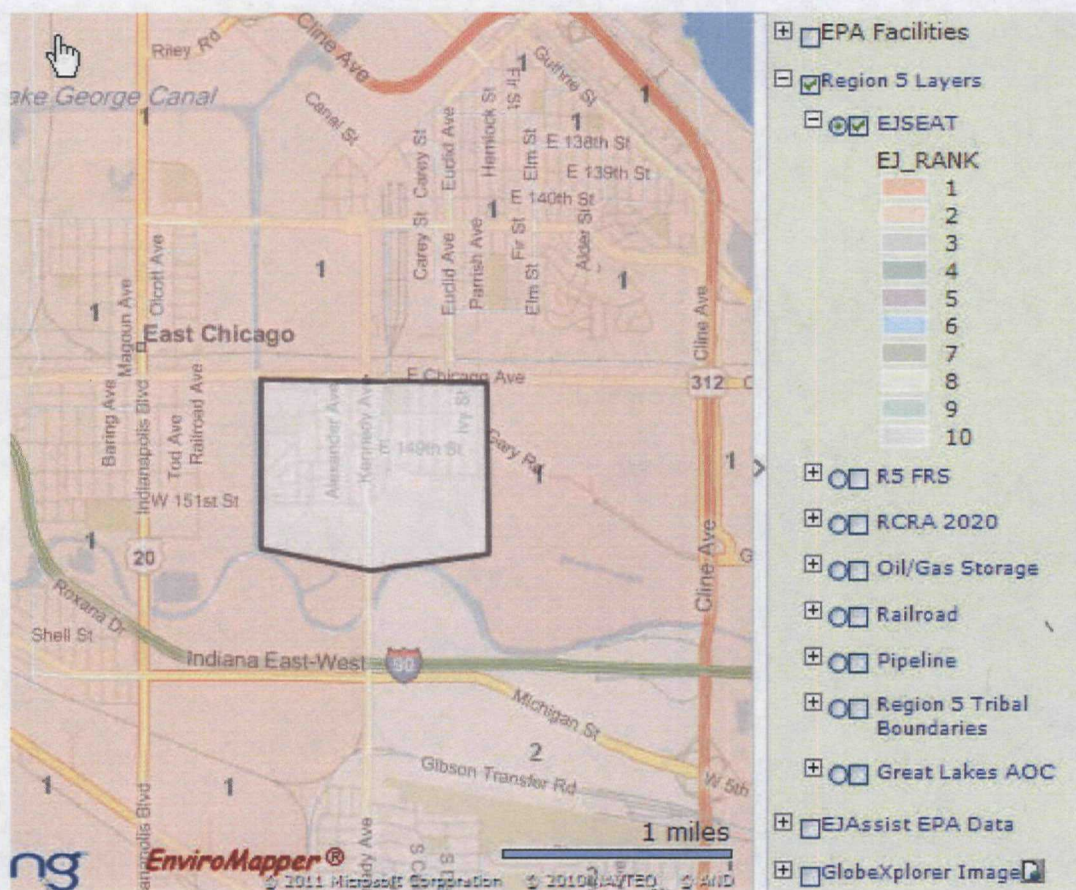
Attachment 1

Superfund EJ Analysis for USS Lead Site, East Chicago, IN

The area surrounding the USS Lead Site was screened for Environmental Justice (EJ) concerns using Region 5's EJ Assist Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSEAT)). Census tracts with a score of 1, 2, or 3 are considered to be high-priority potential EJ areas of concern according to EPA Region 5. The USS Lead Site is in a census tract with a score of 1 (Figure 1). Therefore, Region 5 considers this site to be a high-priority potential EJ area of concern.

Figure 1.

USS Lead Site Map Showing EJ SEAT Values For Surrounding Area



ATTACHMENT 2

ADMINISTRATIVE RECORD INDEX

ATTACHMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY REMOVAL ACTION

ADMINISTRATIVE RECORD FOR USS LEAD SITE EAST CHICAGO, LAKE COUNTY, INDIANA

ORIGINAL
JANUARY 22, 2008

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	04/28/06	U.S. EPA/CRL	File	Generic Chain of Custody for the US Smelter Lead Refinery	2
2	05/02/06	U.S. EPA/CRL	File	Generic Chain of Custody for the US Smelter Lead Site	17
3	05/26/06	U.S. EPA/CRL	File	Review of Region 5 Data for US Smelter Lead Refinery (ICP and GFAA Metals for Waters and Soils	224
4	01/22/08	Micke, F., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Request to Conduct a Time Critical Removal Action at the Residential Portion of the USS Lead Site (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED/SDMS ID:	16

UPDATE #1
AUGUST 13, 2008

1	06/17/08	Micke, F., U.S. EPA	Distribution List	Pollution Report (POLREP) No. 1 - Initial for the USS Lead Site (SDMS ID: 302347)	2
2	08/13/08	Micke, F., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum #2: Request for a Ceiling Increase to Complete the Time Critical Removal Action at the USS Lead Site (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED/SDMS ID: 299818)	30

UPDATE #2
AUGUST 30, 2011

1	12/22/09	Sultrac	U.S. EPA	Excel File: USS Lead Sultrac Pb Results by Property	
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<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
2	07/00/11	U.S. EPA	File	Figure: Sultrac Properties with Lead > 1,200 mg/kg in Soil 0-6"	1
3	00/00/00	Micke, F., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum #3 - (Amendment) Determination of Threat to Public Health and or the Environment at The USS Lead Site (PENDING)	

ATTACHMENT 3

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION**

DETAILED CLEANUP CONTRACTOR AND START ESTIMATE

**USS LEAD SITE
EAST CHICAGO, INDIANA**

JULY 2011

(REDACTED 1 PAGE)

ATTACHMENT 4

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION**

**INDEPENDENT GOVERNMENT COST ESTIMATE
FOR
USS LEAD SITE
EAST CHICAGO, INDIANA**

JULY 2011

(REDACTED 1 PAGE)

ATTACHMENT 5

Properties With Lead > 1,200 mg/kg in Soil 0-6"

ATTACHMENT 5

MAP: SULTRAC PROPERTIES WITH LEAD IN SOIL

**USS LEAD SITE
EAST CHICAGO, INDIANA**

HAS BEEN REDACTED

(REDACTED 1 PAGE)